CENTERS FOR DISEASE CONTROL

February 1, 1991 / Vol. 40 / No. 4

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

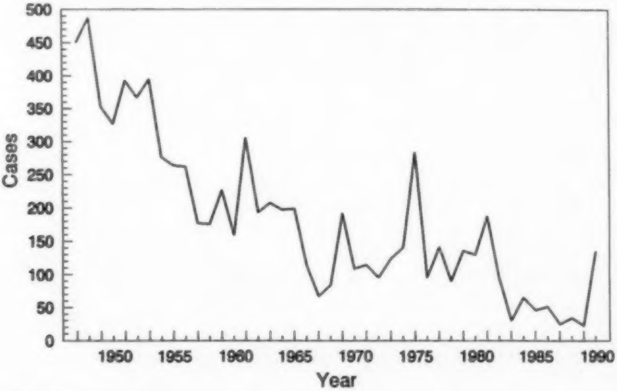
Epidemiologic Notes and Reports

Trichinella spiralis Infection – United States, 1990

Since 1947, when the Public Health Service began to record statistics on trichinosis, the number of cases reported by state health departments each year has declined: in the late 1940s, health departments reported an average of 400 cases and 10–15 deaths each year; from 1982 through 1986, the number declined to an average of 57 per year (Figure 1) and a total of three deaths (*1,2*). Although this trend reflects a decline in the number of cases related to commercially purchased pork, recent outbreaks of trichinosis in Iowa and Virginia emphasize the continuing need for education about the dangers of eating inadequately cooked pork.

Des Moines, Iowa. From July 21 through September 3, 1990, 90 (36%) of 250 persons who attended or ate food taken from a wedding in Des Moines on July 14

FIGURE 1. Reported trichinosis cases – United States, 1947–1990*



*Data for 1987–1990 are preliminary.

Trichinella spiralis — *Continued*

developed trichinosis*; most (approximately 95%) of the 250 persons had immigrated to the United States since 1975 from Southeast Asian countries. Of those who became ill, 52 (58%) were treated by physicians; one of the 52 was hospitalized.

Detailed case histories were obtained from 39 ill and 13 well persons who attended the wedding. Of the 39 ill persons, 34 (87%) ate uncooked pork sausage, compared with four (31%) of the 13 well persons ($p<0.01$, Mantel-Haenszel test); no other foods were associated with illness. The sausage had been prepared from 120 lbs of commercially purchased pork and was served uncooked, as is customary for that food item in Southeast Asian culture. No pork was available for analysis at the time of investigation.

The meat could not be traced back to the source farm because the meat-packing company that supplied the pork slaughters 14,000–15,000 hogs a day from hundreds of farms, and the exact date the hogs were slaughtered was unknown.

Only four (4%) of 107 persons who attended the wedding and were interviewed knew about trichinosis or about the potential hazards of eating undercooked pork. The Iowa Refugee Health Program, Iowa Department of Health, prepared a brief information sheet describing trichinosis and ways to avoid infection and translated this information into the three major languages (Laotian, Cambodian, and Vietnamese) of the Southeast Asian community in Iowa; the information sheet is being distributed by the Bureau of Refugee Programs.

Staunton, Virginia. In November and December 1990, 15 cases of trichinosis* were reported by eight local physicians in Augusta, Page, Rockingham, and Shenandoah counties to the Central Shenandoah Health District, Virginia Department of Health. Six cases were confirmed by muscle biopsy, five had positive serology by bentonite flocculation, and four were epidemiologically linked. Nine of these persons required hospitalization. All patients had fever, myalgia, and periorbital edema; all nine patients for whom eosinophil counts were available had elevated levels.

Detailed case histories were available for all ill persons. Fourteen (93%) persons reported eating pork sausage 4–21 days before onset of symptoms; 10 (67%) ate the sausage uncooked. One person who denied eating undercooked sausage was employed as a meat handler in the plant that processed the implicated sausage.

The investigation was limited to those who were ill; no controls were interviewed. The 14 persons who had consumed sausage had purchased bulk pork sausage from several local retail grocery stores; the stores had purchased this sausage from a local processing plant. No pork was available for analysis at the time of investigation. During the 6 weeks before the outbreak, the plant purchased hogs from two brokers who had obtained hogs from multiple producers in Virginia and surrounding states. The plant produces 1500 lbs of sausage per week, which is distributed throughout eight counties in the Shenandoah Valley.

The health department issued an areawide alert to physicians and hospitals and a news release to all area newspapers that included information on proper cooking and handling of raw pork.

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*The CDC case definition for trichinosis is 1) a *Trichinella*-positive muscle biopsy or positive serologic test for trichinosis in a patient with eosinophilia, fever, myalgia, and/or periorbital edema; or 2) in an outbreak, at least one person must meet the first criterion; associated cases are defined by either a positive serologic test for trichinosis or eosinophilia, fever, myalgia, and/or periorbital edema in persons who have shared the epidemiologically implicated meal or consumed the implicated meat product.

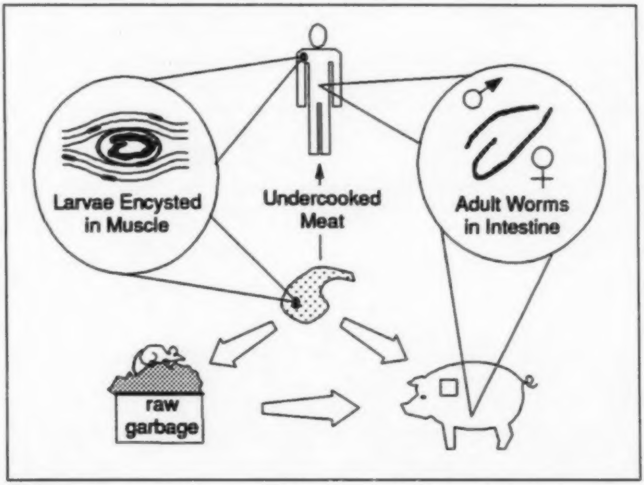
Trichinella spiralis — *Continued*

Reported by: V Phabmixay, LA Wintermeyer, MD, State Epidemiologist, Iowa Dept of Public Health. D Kiser, T Overby, MD, Rockingham Memorial Hospital; S Landry, MS, C Caplen, MD, Central Shenandoah Health District; B Mays, Lord Fairfax Health District; L Branch, Office of Epidemiology; GB Miller, Jr, MD, State Epidemiologist, Virginia Dept of Health. Parasitic Diseases Br, Div of Parasitic Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Since 1975, the proportion of trichinosis cases associated with consumption of contaminated commercial pork has declined in the United States. This decline probably reflects a combination of factors, including laws prohibiting the feeding of offal to hogs, the increased use of home freezers, and the practice of thoroughly cooking pork. In recent years the relative importance of consumption of wild game (including bear, wild boar, and walrus) (*2,3*) as a cause of trichinosis has increased. Consumption of meat from any carnivorous animal that has fed on trichina-infested flesh poses a risk (Figure 2). In addition to the two multiple-case outbreaks in this report, 15 other cases were reported in 1990. At least three cases were sporadic; information on the remaining 12 is unavailable.

The outbreak in Iowa is the fourth since 1975 that occurred among the 900,000 Southeast Asian refugees who have immigrated to the United States (*4,5*). The three previous outbreaks were related to consumption of undercooked pork that was not obtained from a commercial producer (*4*). This outbreak is consistent with previous reports indicating that recent immigrants from Southeast Asia are at particular risk for developing trichinosis because of their dietary habits (*4*).

FIGURE 2. Life cycle of *Trichinella spiralis* in humans



Flesh with infective larvae is eaten by humans or other animals. The larvae become adult worms in the intestine of the host and in turn release new larvae, which penetrate the intestinal wall and encyst in striated muscle. Cannibalism, scavenging for meat scraps, and consumption of farm rats may be important sources of infected flesh. Feeding raw garbage to pigs is illegal in the United States. Wild game, especially bear and boar, are often sources of infection in humans.

Trichinella spiralis — *Continued*

Based on serologic examination of hogs at abattoirs, the prevalence of *Trichinella* infection in commercial pork ranges from 0 to 0.7% (*6,7*). Approximately 80 million hogs are slaughtered commercially each year in the United States. About 40% of the pork produced is sold as "ready to eat" pork products; such products must be made with trichina-free pork or pork adequately cooked or treated to kill trichina larvae. *Trichinella* larvae in pork are killed by freezing at 5 F (–15 C) for 21 days (or longer if meat is >15 cm thick); however, *Trichinella* larvae present in wild game are often relatively resistant to freezing (*8*). Cooking is one of the most common methods of assuring that *Trichinella* are destroyed; a temperature of 170 F (77 C) substantially exceeds the thermal death point and is usually achieved if the meat is cooked until it is no longer pink (*9*).

Public health officials in areas with large populations of immigrants from Southeast Asia should consider education programs directed at the prevention of trichinosis. Physicians need to be aware of the continued presence of *T. spiralis* in commercial pork in the United States and should consider the diagnosis in any patient with an illness compatible with trichinosis and whose dietary preferences put them at risk for infection.

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Current Trends

Update: Years of Potential Life Lost Before Age 65 — United States, 1988 and 1989

Final mortality data from CDC's National Center for Health Statistics (NCHS) indicate that in 1988 deaths in the United States accounted for 12,276,554 years of potential life lost before age 65 (YPLL) (Table 1)—a total consistent with provisional data reported previously (12,281,741 YPLL [*1*]). Provisional data indicate that for 1989 there were 12,370,499 YPLL.

YPLL: Update — Continued

From 1988 to 1989, the YPLL rate for U.S. residents of all ages decreased 0.2%, from 4994 YPLL per 100,000 persons to 4983 per 100,000, respectively. In 1989, unintentional injuries remained the leading cause of YPLL (18%), followed by cancers at all sites (15%), suicide and homicide (12%), diseases of the heart (11%), congenital anomalies (5%), and human immunodeficiency virus (HIV) infection/acquired immunodeficiency syndrome (AIDS) (5%).

TABLE 1. Estimated years of potential life lost before age 65 (YPLL)* and death rates per 100,000 persons, by cause of death — United States, 1988 (final) and 1989 (provisional)

Cause of death (ICD-9)	YPLL for persons dying in 1988	YPLL for persons dying in 1989	Cause-specific crude death rate, 1989†
All causes (total)	**12,276,554**	**12,370,499**	**868.1**
Unintentional injuries (E800–E949)	2,323,440	2,209,993	38.2
Malignant neoplasms (140–208)	1,825,335	1,876,515	200.3
Suicide/Homicide (E950–E978)	1,371,394	1,432,738	21.9
Diseases of the heart (390–398, 402, 404–429)	1,482,223	1,383,355	296.3
Congenital anomalies (740–759)	670,482	663,060	5.1
Human immunodeficiency virus infection§ (042–044)	444,769	562,807	8.6
Prematurity (765, 769)¶	416,441	481,204	3.0
Sudden infant death syndrome (798)	353,596	325,786	2.0
Cerebrovascular disease (430–438)	249,950	234,832	59.4
Chronic liver disease and cirrhosis (571)	235,345	223,383	10.6
Pneumonia/Influenza (480–487)	172,013	163,738	30.3
Diabetes mellitus (250)	134,304	143,659	18.8
Chronic obstructive pulmonary disease (490–496)	133,862	140,683	34.0

*For details of calculation, see footnotes to Table V, *MMWR* 1988;37:45.

†Cause-specific death rates as reported by CDC's National Center for Health Statistics (NCHS) are compiled from a 10% sample of all deaths.

§Sources: CDC, unpublished data; NCHS. Annual summary of births, marriages, divorces, and deaths: United States, 1989. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1990. (Monthly vital statistics report; vol 38, no. 13).

¶Category derived from disorders relating to short gestation and respiratory distress syndrome.

YPLL: Update — Continued

From 1988 to 1989, YPLL decreased for seven causes of death and increased for six (Table 1). The YPLL rate decreased 8% for diseases of the heart, 7% for cerebrovascular disease, and 6% each for pneumonia/influenza, chronic liver disease and cirrhosis, and unintentional injuries. YPLL increased 25% for HIV infection/AIDS, 14% for prematurity, 6% for diabetes mellitus, 4% for chronic obstructive pulmonary disease, and 4% for suicide and homicide. In 1989, suicide and homicide together were the third leading cause of YPLL, compared with fourth in 1988.

Reported by: Applications Br, Div of Surveillance and Epidemiology, Epidemiology Program Office, CDC.

Editorial Note: Crude death rates weight all deaths equally (i.e., the rates provide an estimate of the proportion of a population that dies during a specific period); in comparison, YPLL emphasizes deaths among younger persons and provides a measure of the burden of premature mortality (*2*). YPLL decreased steadily from 1979 through 1987; however, the 1% increase from 1987 to 1988 (*1*) and the small decrease from 1988 to 1989 suggest that premature mortality has been stable during the past 3 years.

In 1989, the increase in YPLL associated with HIV infection/AIDS reflected the growing impact of HIV infection and AIDS mortality on young adults (*3*). The recent increase in YPLL for homicide and suicide indicates the increased occurrence of these problems in adolescents and/or young adults, particularly black males (*4*).

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Smoking-Attributable Mortality and Years of Potential Life Lost — United States, 1988

Smoking is a leading cause of diseases associated with premature mortality in the United States; in 1985, these diseases accounted for an estimated 390,000 premature deaths (*1*). In this report, mortality data and estimates of smoking prevalence for 1988 are used to calculate smoking-attributable mortality (SAM), years of potential life lost (YPLL), and age-adjusted SAM and YPLL rates for the United States (*2*).

Calculations were performed using Smoking-Attributable Mortality, Morbidity, and Economic Cost (SAMMEC II) software (*2*), which includes relative risk estimates for 22 adult (i.e., ≥35 years of age) smoking-related diseases and relative risk estimates for four perinatal (i.e., <1 year of age) conditions (Table 1). Age-, sex-, and race-specific mortality data for 1988 were obtained from CDC's National Center for Health Statistics. Data on burn deaths caused by cigarettes were obtained from the Federal Emergency Management Agency (*3*). The estimated number of deaths among nonsmokers from lung cancer attributable to passive smoking was obtained from a report of the National Academy of Sciences (*4*). Age-, sex-, and race-specific current and former smoking prevalence rates in 1988 for adults aged ≥35 years and for women aged 18–44 years were estimated by linear extrapolation using National Health Interview Survey data for 1974–1987 (*1,5*).

Smoking-Attributable Mortality — Continued

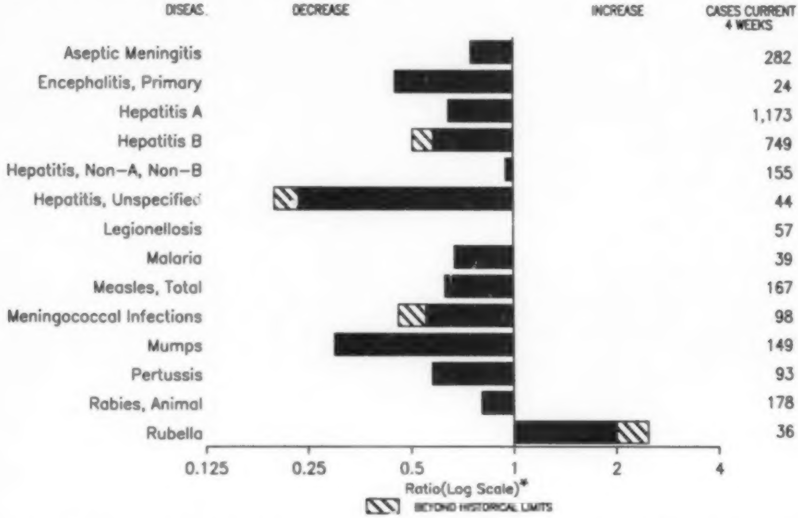
TABLE 1. Relative risks* (RR) for death attributed to smoking and smoking-attributable mortality (SAM) for current and former smokers, by disease category and sex — United States, 1988

	Men			Women			
	RR			RR			
Disease category (ICD-9)	Current smokers	Former smokers	SAM	Current smokers	Former smokers	SAM	Total SAM
Adult diseases (≥35 yrs of age)							
Neoplasms							
Lip, oral cavity, pharynx (140–149)	27.5	8.8	4,942	5.6	2.9	1,460	6,402
Esophagus (150)	7.6	5.8	5,478	10.3	3.2	1,609	7,087
Pancreas (157)	2.1	1.1	2,775	2.3	1.8	3,345	6,120
Larynx (161)	10.5	5.2	2,401	17.8	11.9	589	2,990
Trachea, lung, bronchus (162)	22.4	9.4	78,932	11.9	4.7	33,053	111,985
Cervix uteri (180)	NA	NA	0	2.1	1.9	1,246	1,246
Urinary bladder (188)	2.9	1.9	2,951	2.6	1.9	963	3,914
Kidney, other urinary (189)	3.0	2.0	2,729	1.4	1.2	363	3,092
Cardiovascular diseases							
Hypertension (401–404)	1.9	1.3	3,441	1.7	1.2	2,254	5,695
Ischemic heart disease (410–414)							
Persons aged 35–64 yrs	2.8	1.8	29,263	3.0	1.4	9,105	38,368
Persons aged ≥65 yrs	1.6	1.3	41,821	1.6	1.3	27,990	69,811
Other heart diseases (390–398, 415–417, 420–429)	1.9	1.3	27,503	1.7	1.2	14,638	42,141
Cerebrovascular disease (430–438)							
Persons aged 35–64 yrs	3.7	1.4	5,121	4.8	1.4	4,504	9,625
Persons aged ≥65 yrs	1.9	1.3	11,554	1.5	1.0	5,134	16,688
Atherosclerosis (440)	4.1	2.3	4,644	3.0	1.3	3,612	8,256
Aortic aneurysm (441)	4.1	2.3	5,798	3.0	1.3	1,435	7,233
Other arterial disease (442–448)	4.1	2.3	1,874	3.0	1.3	1,111	2,985
Respiratory diseases							
Pneumonia, influenza (480–487)	2.0	1.6	11,580	2.2	1.4	8,098	19,678
Bronchitis, emphysema (491–492)	9.7	8.8	9,670	10.5	7.0	5,269	14,939
Chronic airways obstruction (496)	9.7	8.8	29,838	10.5	7.0	16,884	46,722
Other respiratory diseases (010–012, 493)	2.0	1.6	828	2.2	1.4	690	1,518
Pediatric diseases (<1 yr of age)							
Short gestation, low birth weight (765)	1.8		344	1.8		261	605
Respiratory distress syndrome (769)	1.8		351	1.8		233	584
Other respiratory conditions of newborn (770)	1.8		384	1.8		277	661
Sudden infant death syndrome (798)	1.5		422	1.5		280	702
Burn deaths†			850			453	1,303
Passive smoking deaths§			1,330			2,495	3,825
Total			**286,824**			**147,351**	**434,175**

*Relative to never smokers.
†Data from the Federal Emergency Management Agency, 1990 (*3*).
§Deaths among nonsmokers from lung cancer attributable to passive smoking (National Academy of Sciences, 1986 [*4*]).

(Continued on page 69)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending January 26, 1991, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from comparable, previous, and subsequent 4-week periods for past 5 years).

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending January 26, 1991 (4th Week)

	Cum. 1991		Cum. 1991
AIDS	2,777	Plague	-
Anthrax	-	Poliomyelitis, Paralytic*	-
Botulism: Foodborne	-	Psittacosis	3
Infant	4	Rabies, human	-
Other	-	Syphilis: civilian	2,891
Brucellosis	4	military	4
Cholera	-	Syphilis, congenital, age < 1 year	-
Congenital rubella syndrome	2	Tetanus	-
Diphtheria	1	Toxic shock syndrome	22
Encephalitis, post-infectious	1	Trichinosis	1
Gonorrhea: civilian	36,899	Tuberculosis	1,131
military	521	Tularemia	4
Leprosy	10	Typhoid fever	18
Leptospirosis	7	Typhus fever, tickborne (RMSF)	8
Measles: imported	6		
indigenous	167		

*No cases of suspected poliomyelitis have been reported in 1991; none of the 6 suspected cases in 1990 have been confirmed to date. Five of the 13 suspected cases in 1989 were confirmed and all were vaccine associated.

TABLE II. Cases of specified notifiable diseases, United States, weeks ending January 26, 1991, and January 27, 1990 (4th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	2,777	322	27	1	36,899	50,662	1,277	818	190	58	57	10
NEW ENGLAND	144	18	2	-	1,562	1,493	34	58	8	2	6	-
Maine	12	-	1	-	6	12	2	1	1	-	-	-
N.H.	5	1	-	-	6	18	2	4	1	-	1	-
Vt.	3	-	-	-	8	8	-	-	-	-	-	-
Mass.	70	7	1	-	522	460	23	48	6	1	5	-
R.I.	8	10	-	-	61	81	7	5	-	1	-	-
Conn.	46	-	-	-	959	914	-	-	-	-	-	-
MID. ATLANTIC	750	35	2	-	3,167	5,263	81	48	6	-	6	-
Upstate N.Y.	119	16	1	-	590	657	55	26	3	-	2	-
N.Y. City	406	-	-	-	-	2,628	-	-	-	-	-	-
N.J.	220	-	-	-	759	1,219	10	4	1	-	-	-
Pa.	5	19	1	-	1,818	759	16	18	2	-	4	-
E.N. CENTRAL	248	42	1	1	5,140	10,367	93	84	35	6	9	-
Ohio	47	25	-	1	-	3,273	50	31	11	3	7	-
Ind.	24	2	-	-	1,013	941	11	6	-	-	-	-
Ill.	107	-	-	-	2,320	2,917	-	-	-	-	-	-
Mich.	55	15	1	-	1,666	2,560	18	40	6	3	2	-
Wis.	15	-	-	-	141	676	14	7	18	-	-	-
W.N. CENTRAL	141	35	2	-	1,898	2,865	197	15	8	-	5	-
Minn.	34	8	1	-	173	381	2	-	-	-	-	-
Iowa	14	9	-	-	139	252	5	1	-	-	-	-
Mo.	79	2	-	-	1,112	1,483	4	2	2	-	2	-
N. Dak.	-	-	-	-	-	22	-	-	-	-	-	-
S. Dak.	-	3	1	-	22	23	131	-	-	-	1	-
Nebr.	4	6	-	-	200	99	28	5	-	-	2	-
Kans.	10	7	-	-	252	605	27	7	6	-	-	-
S. ATLANTIC	622	81	6	-	13,800	15,148	68	195	28	3	9	-
Del.	5	3	-	-	121	165	4	9	1	-	-	-
Md.	79	11	2	-	1,555	1,604	20	28	7	1	2	-
D.C.	44	5	-	-	862	825	4	10	-	1	-	-
Va.	30	8	-	-	1,135	1,335	4	13	1	-	1	-
W. Va.	5	1	1	-	115	111	2	4	-	1	-	-
N.C.	40	39	2	-	2,703	2,890	22	56	17	-	3	-
S.C.	22	3	-	-	1,329	1,583	5	43	1	-	2	-
Ga.	108	-	1	-	3,350	3,458	3	25	-	-	1	-
Fla.	289	11	-	-	2,630	3,177	4	7	1	-	-	-
E.S. CENTRAL	76	25	1	-	3,313	4,385	20	86	33	2	7	-
Ky.	1	9	-	-	381	445	4	20	1	2	4	-
Tenn.	28	12	1	-	1,029	1,145	10	59	32	-	2	-
Ala.	29	3	-	-	1,111	1,865	6	7	-	-	1	-
Miss.	18	1	-	-	792	930	-	-	-	-	-	-
W.S. CENTRAL	246	28	4	-	3,252	4,335	87	60	5	5	3	2
Ark.	-	23	-	-	387	749	16	-	-	-	-	-
La.	33	2	-	-	750	756	9	26	1	-	1	-
Okla.	5	1	3	-	398	392	30	23	4	3	2	-
Tex.	208	2	1	-	1,717	2,438	32	11	-	2	-	2
MOUNTAIN	87	11	2	-	785	1,153	246	61	11	9	9	-
Mont.	5	1	-	-	5	10	12	10	-	2	-	-
Idaho	1	-	-	-	6	5	4	3	-	-	-	-
Wyo.	3	-	-	-	4	12	1	-	-	-	-	-
Colo.	47	2	-	-	159	343	7	8	2	1	1	-
N. Mex.	10	-	-	-	63	80	67	3	-	2	-	-
Ariz.	-	4	2	-	380	437	99	23	3	1	2	-
Utah	4	2	-	-	30	31	48	4	3	3	4	-
Nev.	17	2	-	-	138	235	8	10	3	-	2	-
PACIFIC	463	47	7	-	3,982	5,653	451	211	56	31	3	8
Wash.	35	-	-	-	324	592	47	31	5	1	-	-
Oreg.	-	-	-	-	164	216	26	15	6	1	-	-
Calif.	407	44	7	-	3,425	4,725	369	160	44	28	3	8
Alaska	2	-	-	-	50	104	6	4	1	1	-	-
Hawaii	19	3	-	-	19	16	3	1	-	-	-	-
Guam	-	-	-	-	-	18	-	-	-	-	-	-
P.R.	136	-	-	-	-	134	-	-	-	-	-	-
V.I.	-	-	-	-	28	27	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	9	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	18	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 26, 1991, and January 27, 1990 (4th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	44	79	167	-	6	810	108	49	159	23	102	190	28	36	25
NEW ENGLAND	6	-	-	-	-	8	14	-	1	1	8	37	-	-	1
Maine	-	-	-	-	-	1	-	-	-	-	1	1	-	-	-
N.H.	-	-	-	-	-	1	3	-	-	1	7	-	-	-	-
Vt.	1	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Mass.	3	-	-	-	-	-	10	-	-	-	-	35	-	-	-
R.I.	2	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Conn.	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-
MID. ATLANTIC	-	46	74	-	-	33	12	3	14	2	22	19	-	-	-
Upstate N.Y.	-	-	-	-	-	3	7	3	6	2	7	6	-	-	-
N.Y. City	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
N.J.	-	-	3	-	-	8	1	-	-	-	1	7	-	-	-
Pa.	-	46	71	-	-	18	4	-	8	-	14	6	-	-	-
E.N. CENTRAL	2	-	1	-	1	558	9	1	18	1	9	64	-	-	3
Ohio	-	-	-	-	-	-	3	-	-	-	7	-	-	-	-
Ind.	1	-	-	-	-	3	-	-	-	-	-	26	-	-	-
Ill.	-	-	-	-	-	244	-	-	8	-	-	12	-	-	3
Mich.	1	-	1	-	-	76	6	1	9	1	2	8	-	-	-
Wis.	-	-	-	-	1	235	-	-	1	-	-	18	-	-	-
W.N. CENTRAL	-	-	-	-	-	36	3	1	7	2	14	7	-	1	-
Minn.	-	-	-	-	-	-	-	1	2	1	7	1	-	1	-
Iowa	-	-	-	-	-	19	-	-	2	1	3	-	-	-	-
Mo.	-	-	-	-	-	17	-	-	-	-	1	4	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
S. Dak.	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-
Kans.	-	-	-	-	-	-	2	-	3	-	1	-	-	-	-
S. ATLANTIC	8	-	1	-	-	21	23	27	62	5	6	25	1	4	-
Del.	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-
Md.	3	-	-	-	-	12	4	1	26	-	-	10	-	3	-
D.C.	-	-	-	-	-	-	-	-	3	-	-	1	-	-	-
Va.	-	-	-	-	-	4	1	1	5	-	1	1	-	-	-
W. Va.	1	-	-	-	-	-	1	-	1	-	-	3	-	-	-
N.C.	-	-	-	-	-	-	8	20	20	5	5	4	1	1	-
S.C.	1	-	-	-	-	-	2	4	4	-	-	-	-	-	-
Ga.	2	-	-	-	-	-	3	-	-	-	-	2	-	-	-
Fla.	1	-	1	-	-	4	4	1	3	-	-	2	-	-	-
E.S. CENTRAL	1	-	-	-	-	12	11	1	2	2	4	9	-	-	-
Ky.	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Tenn.	-	-	-	-	-	9	2	-	-	1	2	1	-	-	-
Ala.	1	-	-	-	-	-	6	-	1	1	2	8	-	-	-
Miss.	-	-	-	-	-	3	-	1	1	-	-	-	-	-	-
W.S. CENTRAL	1	-	-	-	4	-	4	4	6	1	6	1	-	-	-
Ark.	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
La.	1	-	-	-	-	-	4	1	2	1	6	1	-	-	-
Okla.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Tex.	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-
MOUNTAIN	1	2	10	-	-	6	6	1	11	1	10	4	-	1	-
Mont.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wyo.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Colo.	1	-	-	-	-	-	2	1	2	-	3	-	-	-	-
N. Mex.	-	2	4	-	-	-	-	N	N	1	2	-	-	-	-
Ariz.	-	-	1	-	-	6	3	-	9	-	5	3	-	-	-
Utah	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Nev.	-	-	5	-	-	-	-	-	-	-	-	-	-	1	-
PACIFIC	25	31	81	-	1	136	26	11	38	8	23	24	27	30	21
Wash.	2	-	-	-	-	7	2	1	3	-	-	2	-	-	-
Oreg.	1	-	-	-	-	1	5	N	N	3	4	5	-	-	-
Calif.	21	30	79	-	1	128	18	10	30	3	10	15	27	30	19
Alaska	-	-	-	-	-	-	1	-	3	-	1	-	-	-	-
Hawaii	1	1	2	-	-	-	-	-	2	2	8	2	-	-	2
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
V.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable [†]International [§]Out-of-state

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 26, 1991, and January 27, 1990 (4th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	2,891	2,944	22	1,131	1,244	4	18	8	215
NEW ENGLAND	80	142	3	28	7	-	3	1	-
Maine	-	1	2	-	-	-	-	-	-
N.H.	-	23	-	-	1	-	-	-	-
Vt.	1	-	-	-	-	-	-	-	-
Mass.	42	39	1	8	-	-	3	1	-
R.I.	2	-	-	6	1	-	-	-	-
Conn.	35	79	-	14	5	-	-	-	-
MID. ATLANTIC	612	586	4	174	370	-	-	-	101
Upstate N.Y.	22	19	2	-	25	-	-	-	24
N.Y. City	291	434	-	127	278	-	-	-	-
N.J.	91	108	-	35	33	-	-	-	38
Pa.	208	25	2	12	34	-	-	-	39
E.N. CENTRAL	267	130	4	121	135	-	1	-	2
Ohio	8	38	3	47	9	-	-	-	-
Ind.	19	1	-	2	11	-	-	-	-
Ill.	194	54	-	63	84	-	-	-	-
Mich.	18	7	1	-	24	-	1	-	-
Wis.	28	30	-	9	7	-	-	-	2
W.N. CENTRAL	42	32	5	25	26	2	-	1	16
Minn.	7	11	3	-	9	-	-	-	10
Iowa	2	3	2	8	1	-	-	-	-
Mo.	33	14	-	12	7	-	-	-	-
N. Dak.	-	1	-	2	3	-	-	-	5
S. Dak.	-	-	-	1	2	-	-	-	-
Nebr.	-	-	-	-	4	-	-	-	1
Kans.	-	3	-	2	-	2	-	1	-
S. ATLANTIC	866	1,066	1	124	164	-	4	3	62
Del.	8	13	-	3	4	-	-	-	7
Md.	97	86	-	14	21	-	2	-	23
D.C.	50	42	-	11	-	-	-	-	-
Va.	67	56	-	7	13	-	-	-	8
W. Va.	1	1	-	6	3	-	-	-	5
N.C.	115	127	1	38	15	-	-	3	-
S.C.	111	81	-	18	31	-	-	-	4
Ga.	201	310	-	17	20	-	2	-	15
Fla.	216	350	-	10	57	-	-	-	-
E.S. CENTRAL	322	305	-	74	54	-	-	2	6
Ky.	5	-	-	13	28	-	-	1	1
Tenn.	169	134	-	-	4	-	-	-	-
Ala.	80	94	-	35	21	-	-	1	5
Miss.	68	77	-	26	1	-	-	-	-
W.S. CENTRAL	339	322	1	101	130	1	-	1	16
Ark.	19	28	-	9	24	1	-	-	3
La.	120	144	-	46	51	-	-	-	1
Okla.	11	19	1	2	2	-	-	1	6
Tex.	189	131	-	44	53	-	-	-	6
MOUNTAIN	54	46	-	44	21	1	-	-	3
Mont.	-	-	-	-	-	1	-	-	2
Idaho	-	1	-	-	-	-	-	-	-
Wyo.	1	-	-	-	-	-	-	-	-
Colo.	8	4	-	6	-	-	-	-	-
N. Mex.	3	7	-	-	7	-	-	-	-
Ariz.	42	22	-	27	6	-	-	-	1
Utah	-	1	-	10	-	-	-	-	-
Nev.	-	11	-	1	8	-	-	-	-
PACIFIC	309	315	4	440	337	-	10	-	9
Wash.	-	36	-	11	18	-	-	-	-
Oreg.	3	4	-	6	10	-	-	-	-
Calif.	305	271	4	408	284	-	9	-	9
Alaska	1	1	-	1	7	-	-	-	-
Hawaii	-	3	-	14	18	-	1	-	-
Guam	-	-	-	-	6	-	-	-	-
P.R.	-	41	-	-	1	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	6	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending January 26, 1991 (4th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	680	487	113	53	15	12	75
Boston, Mass.	186	123	31	23	6	3	20
Bridgeport, Conn.	58	39	13	4	2	-	7
Cambridge, Mass.	26	21	3	1	1	-	4
Fall River, Mass.	30	24	3	2	-	1	-
Hartford, Conn.	53	37	9	6	1	-	2
Lowell, Mass.	20	16	3	-	-	1	1
Lynn, Mass.	18	14	2	1	1	-	1
New Bedford, Mass.	29	23	3	3	-	-	6
New Haven, Conn.	49	33	10	3	2	1	7
Providence, R.I.	49	35	13	-	-	1	3
Somerville, Mass.	6	4	-	2	-	-	-
Springfield, Mass.	46	34	8	2	-	2	7
Waterbury, Conn.	36	24	6	3	2	1	3
Worcester, Mass.	74	60	9	3	-	2	14
MID. ATLANTIC	2,937	1,933	589	300	51	63	193
Albany, N.Y.	60	44	10	3	1	2	2
Allentown, Pa.	21	17	2	2	-	-	2
Buffalo, N.Y.§	U	U	U	U	U	U	U
Camden, N.J.	30	19	7	2	-	2	3
Elizabeth, N.J.	32	19	10	2	1	-	2
Erie, Pa.†	44	41	1	1	-	1	5
Jersey City, N.J.	59	42	12	3	-	2	-
N.Y. City, N.Y.	1,532	986	309	188	25	24	87
Newark, N.J.	61	28	13	7	5	8	8
Paterson, N.J.	31	16	7	5	1	2	3
Philadelphia, Pa.	594	366	138	63	15	11	37
Pittsburgh, Pa.†	104	76	18	5	-	5	6
Reading, Pa.	39	35	4	-	-	-	9
Rochester, N.Y.	110	81	23	4	-	2	14
Schenectady, N.Y.	25	19	6	-	-	-	-
Scranton, Pa.†	50	41	7	2	-	-	4
Syracuse, N.Y.	44	32	7	2	-	3	4
Trenton, N.J.	34	27	2	2	2	1	2
Utica, N.Y.	20	13	4	3	-	-	-
Yonkers, N.Y.	47	31	9	6	1	-	5
E.N. CENTRAL	3,059	2,168	491	150	82	168	137
Akron, Ohio	50	36	8	3	2	1	-
Canton, Ohio	52	35	15	1	-	1	6
Chicago, Ill.	1,295	958	155	25	44	113	34
Cincinnati, Ohio	140	95	33	4	4	4	13
Cleveland, Ohio	139	84	30	14	1	10	2
Columbus, Ohio	164	105	35	11	9	4	5
Dayton, Ohio	110	77	25	6	-	2	8
Detroit, Mich.	243	141	55	31	8	8	9
Evansville, Ind.	45	33	9	2	1	-	5
Fort Wayne, Ind.	64	50	9	2	2	1	2
Gary, Ind.	21	7	6	4	-	4	-
Grand Rapids, Mich.	56	42	8	4	-	2	8
Indianapolis, Ind.	162	106	32	13	6	5	11
Madison, Wis.	43	31	5	3	3	1	7
Milwaukee, Wis.	186	146	28	8	-	4	9
Peoria, Ill.	40	28	5	3	1	3	4
Rockford, Ill.	58	37	11	7	1	2	3
South Bend, Ind.	55	44	7	3	-	1	4
Toledo, Ohio	70	58	7	4	-	1	5
Youngstown, Ohio	66	55	8	2	-	1	2
W.N. CENTRAL	800	576	135	54	19	16	61
Des Moines, Iowa	72	62	7	3	-	-	2
Duluth, Minn.	28	24	3	1	-	-	1
Kansas City, Kans.	49	24	15	6	2	2	2
Kansas City, Mo.	129	86	30	8	4	1	14
Lincoln, Nebr.	44	36	6	2	-	-	7
Minneapolis, Minn.	175	125	30	14	5	1	17
Omaha, Nebr.	73	54	14	3	-	2	3
St. Louis, Mo.	100	65	16	8	5	6	8
St. Paul, Minn.	76	64	6	3	1	2	6
Wichita, Kans.	54	36	8	6	2	2	1

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,420	928	280	145	35	32	96
Atlanta, Ga.	185	116	39	23	1	6	11
Baltimore, Md.	340	211	69	41	13	6	25
Charlotte, N.C.	90	63	16	9	2	-	4
Jacksonville, Fla.	130	77	33	13	4	3	9
Miami, Fla.	109	67	19	18	3	2	2
Norfolk, Va.	83	54	12	7	3	7	10
Richmond, Va.	120	81	31	5	1	2	8
Savannah, Ga.	100	75	13	8	3	1	8
St. Petersburg, Fla.	66	57	6	2	1	-	9
Tampa, Fla.	163	108	34	15	3	3	10
Washington, D.C.§	U	U	U	U	U	U	U
Wilmington, Del.	34	19	8	4	1	2	-
E.S. CENTRAL	608	415	110	46	15	22	47
Birmingham, Ala.§	U	U	U	U	U	U	U
Chattanooga, Tenn.	61	47	8	3	1	2	5
Knoxville, Tenn.	103	77	17	7	1	1	12
Louisville, Ky.	51	30	11	3	2	5	1
Memphis, Tenn.	215	142	37	19	9	8	17
Mobile, Ala.	51	36	8	4	1	2	4
Montgomery, Ala.§	U	U	U	U	U	U	U
Nashville, Tenn.	127	83	29	10	1	4	8
W.S. CENTRAL	1,574	978	318	155	63	60	118
Austin, Tex.	75	46	13	10	3	3	8
Baton Rouge, La.	49	29	12	4	2	2	7
Corpus Christi, Tex.	48	32	7	6	2	1	4
Dallas, Tex.	209	125	36	26	14	8	7
El Paso, Tex.	81	52	15	6	5	3	4
Fort Worth, Tex.	93	61	15	9	3	5	6
Houston, Tex.	454	262	101	52	24	15	47
Little Rock, Ark.	67	43	12	5	-	7	4
New Orleans, La.	124	69	32	17	3	3	-
San Antonio, Tex.	202	138	41	14	5	4	10
Shreveport, La.	64	42	11	3	-	8	9
Tulsa, Okla.	108	79	23	3	2	1	12
MOUNTAIN	695	442	141	66	23	23	52
Albuquerque, N. Mex.	73	51	10	8	2	2	3
Colo. Springs, Colo.	45	25	12	4	3	1	2
Denver, Colo.	106	75	18	9	1	3	10
Las Vegas, Nev.	122	77	28	15	-	2	6
Ogden, Utah	19	13	3	1	1	1	1
Phoenix, Ariz.	122	70	32	10	6	4	5
Pueblo, Colo.	20	15	4	1	-	-	1
Salt Lake City, Utah	55	23	14	7	6	5	8
Tucson, Ariz.	133	93	20	11	4	5	16
PACIFIC	1,844	1,233	335	186	41	38	133
Berkeley, Calif.	23	19	3	-	1	-	1
Fresno, Calif.	59	36	11	6	2	4	11
Glendale, Calif.	21	16	3	1	-	-	1
Honolulu, Hawaii	100	73	19	7	-	1	6
Long Beach, Calif.	77	49	20	3	2	3	7
Los Angeles Calif.	403	235	83	58	14	5	11
Oakland, Calif.§	U	U	U	U	U	U	U
Pasadena, Calif.	34	27	4	1	1	1	5
Portland, Oreg.	156	114	24	11	3	4	13
Sacramento, Calif.	177	114	32	21	5	5	23
San Diego, Calif.	113	72	23	12	2	4	9
San Francisco, Calif.	175	105	30	32	3	3	7
San Jose, Calif.	239	178	38	15	3	5	24
Seattle, Wash.	139	99	26	10	2	2	2
Spokane, Wash.	62	45	12	3	2	-	3
Tacoma, Wash.	66	51	7	6	1	1	10
TOTAL	13,617††	9,160	2,512	1,155	344	434	912

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Report for this week is unavailable (U).

Smoking-Attributable Mortality — Continued

YPLL before age 65 and before age 85 were calculated according to standard methods (*2*). Age-adjusted SAM and YPLL rates were calculated by the direct method and standardized to the 1980 U.S. population. YPLL estimates do not include deaths related to passive smoking.

Based on these calculations, in 1988, approximately 434,000 deaths and 1,199,000 YPLL before age 65 (6,028,000 before age 85) were attributable to cigarette smoking (Tables 1 and 2). Although SAM for blacks represented 11% of total SAM, the SAM rate for blacks was 12% higher than for whites. The SAM for men was 66% of total SAM, and the SAM rate for men was more than twice the rate for women (Tables 2 and 3). In addition, the rate of smoking-attributable YPLL before age 65 for blacks was twice that for whites, and the smoking-attributable YPLL rate for men was almost three times that for women. For YPLL before age 85, the rate for blacks was 52% higher than for whites, and for men, more than twice that for women (Table 3).

Reported by: JM Shultz, PhD, Univ of Miami School of Medicine, Miami, Florida. Program Svcs Activity, Office on Smoking and Health, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: For 1988, total estimated smoking-attributable deaths (434,000) were substantially higher than for 1985 (390,000) (*1*). Although SAM from ischemic heart disease declined between 1985 and 1988, SAM from lung cancer and chronic obstructive pulmonary disease was higher. Several heart disease categories (*International Classification of Diseases, Ninth Revision* [ICD-9] rubrics 390–398, 415–417, 420–429) were included in the calculations for 1988 but not for 1985, contributing to the higher SAM estimate for 1988.

The higher SAM rates for blacks underscore concerns about the higher burden of smoking-related diseases among blacks than among whites. For example, the average lung cancer death rate from 1980 through 1987 for blacks was 2.3 times higher than for whites (*6*). In addition, the larger racial disparity in smoking-attributable YPLL suggests that onset of smoking-attributable disease occurs at younger ages among blacks than among whites.

In this report, the SAM estimate for the United States represents a conservative estimate because it is based on 1988 prevalence data, whereas smoking-attributable diseases in 1988 actually are caused by higher rates of smoking in the 1950s, 1960s, and 1970s. For persons aged ≥55 years who smoked during those decades, lung cancer incidence and death rates and the chronic obstructive pulmonary disease death rate are increasing (*6,7*).

The SAM described in this report also represents a conservative estimate because the calculations did not include deaths from cardiovascular disease that may have been attributable to passive smoking and deaths from cancers at unspecified sites (*1*), leukemia (*8*), and ulcers (*9*)—all of which may also be associated with cigarette smoking. A recent analysis estimated that each year passive smoking is associated with 37,000 deaths from heart disease (*10*).

Despite declines in the prevalence of smoking in the United States, the absolute numbers of deaths caused by smoking-related diseases may increase for several years. This trend is due partly to the increase in absolute numbers of smokers among the post-World War II generation (i.e., persons aged 25–44 years), who will soon attain the ages at which smoking-related diseases occur (*5*). Persons in this age group and in older age groups will continue to develop chronic diseases associated with smoking unless widespread cessation efforts are successful. However, because

TABLE 2. Estimated smoking-attributable mortality (SAM) and sr by race, sex, and age* — United States, 1988

Race	SAM				Smoking-attribu before ag		
	Men	Women	Pediatric	Total†	Men	Women	Pec
White	248,241	128,801	1,615	378,657	573,044	236,776	10
Black	32,781	14,011	900	47,692	144,481	65,899	5
Other	2,967	994	36	3,997	10,207	3,987	
Unknown§	1,330	2,495		3,825			
Total†	**285,319**	**146,301**	**2,551**	**434,175**	**727,732**	**306,662**	**16**

*Men and women, ≥35 years of age; pediatric, <1 year of age.
†Sums may not equal total because of rounding.
§Deaths among nonsmokers from lung cancer attributable to passive smol YPLL associated with these deaths are unknown and are not included in

...d smoking-attributable years of potential life lost (YPLL),

...tributable YPLL ...e age 65		Smoking-attributable YPLL before age 85			
Pediatric	Total[†]	Men	Women	Pediatric	Total[†]
104,122	913,943	3,440,682	1,444,823	136,408	5,021,914
58,057	268,437	606,297	257,438	76,059	939,794
2,313	16,507	46,623	16,486	3,030	66,138
164,492	**1,198,887**	**4,093,602**	**1,718,747**	**215,497**	**6,027,846**

...smoking; estimates were available by sex but not by race (*4*). The ...d in this table.

Smoking-Attributable Mortality — Continued

of the declining prevalence of smoking in the United States, death rates of lung cancer (*11*) and of coronary heart disease (*12*) among younger men and women have already begun to decline. Because smoking cessation is associated with a decreased risk for premature death at any age (*9*), efforts to support cessation must be further encouraged in the elderly and other groups (e.g., women and minorities) characterized by higher smoking prevalences or slower rates of decline in smoking.

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TABLE 3. Age-adjusted smoking-attributable mortality (SAM) rates* and smoking-attributable years of potential life lost (YPLL) rates, by race† and sex — United States, 1988

	SAM			Smoking-attributable YPLL (before age 65 yrs) rate			Smoking-attributable YPLL (before age 85 yrs) rate		
Race	Men	Women	Both	Men	Women	Both	Men	Women	Both
White	555.8	244.2	389.3	1,773.8	699.1	1,224.7	8152.0	3,063.8	5,472.8
Black	702.9	231.5	437.3	3,776.4	1,397.8	2,471.8	13,152.0	4,443.0	8,311.6
Other	186.8	54.0	115.0	843.1	290.8	549.3	3,177.0	968.4	1,981.5
Total	**558.6**	**240.7**	**387.8**	**1,926.9**	**761.0**	**1,326.0**	**8,436.4**	**3,140.5**	**5,631.0**

*Per 100,000 persons aged ≥35 years (adjusted to the 1980 U.S. population).
†Race-specific rates for SAM and all rates for smoking-attributable YPLL do not include passive smoking-related deaths.

Notices to Readers

Change of Dosing Regimen for Malaria Prophylaxis with Mefloquine

CDC recommends mefloquine (Lariam®) *alone* as the drug of choice for malaria prevention for travelers to areas with drug-resistant *Plasmodium falciparum* malaria (*1–4*).* Based on accumulating experience with this drug, the prophylactic dosing regimen has been revised to a single dose of mefloquine to be taken every week (*3*). The first dose should be taken 1 week before travel. It should be continued *weekly* during the entire period of travel in malarious areas and for 4 weeks after departure from such areas.

The previous dosing regimen (in which one dose was taken each week for 4 weeks, followed by one dose every other week) compromises the effectiveness of mefloquine. Malaria prophylaxis with this dosing regimen among Peace Corps volunteers in West Africa was less effective than expected (*5*). The relatively low effectiveness was due to the every-other-week dosing regimen because all mefloquine prophylaxis failures occurred during the second week of the alternate-week dosing regimen in volunteers who had used mefloquine >2 months. Mean mefloquine blood concentrations were substantially lower during the second week of the every-2-weeks dosing regimen than during the first week, suggesting that during the second week blood levels are too low to suppress parasitemia (*5*).

All studies confirm that mefloquine is well tolerated when used for prophylaxis. No serious adverse reactions to mefloquine prophylaxis (i.e., psychoses and convulsions) have been observed among Peace Corps volunteers or among 18,462 persons enrolled in prophylactic drug trials and surveys of travelers who were taking mefloquine weekly (*5*). However, serious adverse reactions have been reported, especially when mefloquine was used for treatment of patients with malaria. Because mefloquine has been used in the United States for only 18 months, monitoring of adverse reactions remains important. Physicians are encouraged to report serious adverse reactions in persons using mefloquine to CDC's Malaria Branch, Division of Parasitic Diseases, Center for Infectious Diseases; telephone (404) 488-4046.

Consistent with previous guidelines, mefloquine is *not* recommended for use by travelers with known hypersensitivity to mefloquine; children <15 kg (30 lbs); pregnant women; travelers using beta blockers; travelers involved in tasks requiring fine coordination and spatial discrimination, such as airplane pilots; and travelers with histories of epilepsy or psychiatric disorder (*1,2*).

Travelers to areas of risk where chloroquine-resistant *P. falciparum* is endemic and for whom mefloquine is contraindicated may elect to use daily doxycycline *alone* or chloroquine *alone*. If chloroquine is used, the traveler needs to be aware of the need to seek medical attention for febrile episodes and to carry a treatment dose of pyrimethamine-sulfadoxine (Fansidar®) to be used if medical care is not available within 24 hours (*1,2*).

The CDC publication *Health Information for International Travel* (*2*) provides detailed information for each country on the risk for malaria to travelers and on the presence of drug-resistant *P. falciparum* (*1*). Health information for travelers is available 24 hours a day from the CDC automated telephone system at (404) 332-4555.

*This revision replaces the recommended mefloquine dosing regimen in reference 1, page 4 and figure 2, and reference 2, page 98.

Mefloquine — Continued

Periodic shortages of mefloquine have occurred in the United States. Travelers who cannot obtain mefloquine before departure may be able to purchase it in Europe while in transit to countries with endemic malaria. Prescriptions written in the United States are accepted at airport pharmacies in Frankfurt and Paris (both Charles de Gaulle and Orly airports). The pharmacy at Heathrow Airport in London requires prescriptions written in Great Britain. At the airport pharmacy in Brussels, a prescription from the airport physician is required. Mefloquine is not available at the airports in Amsterdam and Rome and at Gatwick (London).

In some countries, a fixed combination of mefloquine and pyrimethamine-sulfadoxine is marketed under the name Fansimef®. Fansimef® should not be confused with mefloquine, and it is not recommended for prophylaxis of malaria.

Reported by: Malaria Br, Div of Parasitic Diseases, Center for Infectious Diseases, CDC.

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Epidemiology in Action Course

CDC and Emory University will cosponsor a course designed for practicing state and local health department professionals. This course, "Epidemiology in Action," will be held at CDC May 20–31, 1991. It emphasizes the practical application of epidemiology to public health problems and will consist of lectures, workshops, classroom exercises (including actual epidemiologic problems), roundtable discussions, and an on-site community survey. There is a tuition charge.

Applications must be received by February 28. For further information and/or an application form, contact PSB, Emory University, School of Public Health, American Cancer Society Building, 4th floor, 1599 Clifton Road, NE, Atlanta, GA 30329; telephone (404) 727-3485 or 727-0199.

Erratum: Vol. 40, No. 3

In the text accompanying the "Quarterly AIDS Map" on page 55, the telephone number for the National AIDS Information Clearinghouse is incorrect. The correct telephone number is (800) 458-5231.

The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials, as well as matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Mailstop C-08, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

☆U.S. Government Printing Office: 1991-531-130/22049 Region IV

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
Atlanta, Georgia 30333

Official Business
Penalty for Private Use $300

HHS Publication No. (CDC) 91-8017